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Working multimodally: Challenges for assessment

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ABSTRACT: This article explores the emergence of multimodality as intrinsic to the learning, teaching and assessment of English in the Twenty-First Century. With subject traditions tied to the study of language, literature and media, multimodal texts and new technologies are now accorded overdue recognition in English curriculum documents in several countries, though assessment tends to remain largely print-centric. Until assessment modes and practices align with the nature of multimodal text production, their value as sites for inquiry in classroom practice will not be assured. The article takes up the question: What is involved in assessing the multimodal texts that students create? In exploring this question, we first consider central concepts of multimodality and what is involved in "working multimodally" to create a multimodal text. Here, "transmodal operation" and "staged multimodality" are considered as central concepts to "working multimodally". Further, we suggest that these concepts challenge current understandings of the purposes of, and possibilities for, assessment of multimodal text production.

KEYWORDS: Digital literacy, assessment, multimodalities.

INTRODUCTION

The framing of English curriculum has always been a highly contested scene. Tied to political agendas and the pervasive socio-economic-cultural contexts of the era, the ultimate decisions made in the framing of curriculum documents reflect shifting theoretical positions, subject discipline priorities and values. Invariably, debate focuses on the importance of language skills, literary heritage and understandings of the era's literacy practices. Such debates have impacted models of English teaching in many countries including the United States, the United Kingdom, Canada, New Zealand, and Australia (Dixon, 1969; Freebody, Ludwig & Gunn, 1995). Broadly speaking, however, each iteration of English curriculum reflects versions of language skills, personal growth and cultural heritage, and critical-cultural models, though with differing emphases, omissions and inclusions.

This article seeks to go beyond the well-worn terrain of the different schools of thought about English language and literacy education. Its aim is to explore how the notion of multimodality as it relates to digital design has significant implications for assessment and what comes to be counted as valued knowledge and demonstrations of learning. The article is essentially exploratory. It puts forward the proposition that print-dominant ways of assessing are of limited use in assessing digital design and

students' multimodal text creation processes and products. If this is accepted, then there is a need for developing new ways of thinking and talking about assessment of such processes and products, especially in the interests of addressing what might count as quality. Supporting this is the well recognised view that New Literacies are not just extensions of previous generations of literacies (Unsworth, 2008; Leu, Kinzer, Coiro & Cammack, 2004), nor can they necessarily be discussed in similar terms. In commenting on this key point, Burke (2009) cautioned:

> We need to think about what new literacies actually mean and how defining and assessing them according to past understandings neglects the nature, practicality, and implementation of such real literate experiences for the children in our schools. Reading books and reading screens are not the same experience, though they may share elements in common (p. 51).

The very multiplicity of ways that are currently open for composition and communication challenges long-held understandings of literacy education, especially their evolutionary nature. According to Leu, Kinzer, Coiro & Cammack (2004), notions of being print-literate are not easily transferable to a multimedia-saturated world, and given the deictic nature of technology change (Leu & Kinzer, 2000), "New literacies will continuously be new, multiple and rapidly disseminated" (Coiro, Knobel, Lankshear & Leu, 2008, p. 5). All this would suggest that the naming of multimodal texts and multimedia in curriculum documents could well be superseded by newer technological forms, not yet invented, and that English may remain in a perpetual cycle of redefinition and reconstruction.

Emergent research has established that writing and reading in the digital age can be more complex and involved than in print (see, for example, Bearne, 2009; Burn, 2008; Coiro *et al.,* 2008; Leu *et al.,* 2004). Given the complexity of multimodal presentations, where image, written word, spoken word, gesture and movement are combined within the New London Group's (2000) notion of a multiliterate design, closer investigation is both timely and foundational for English teaching. If an appreciation of the multifaceted nature of multimodal texts can be developed into a set of broad principles, then it is possible to arrive at a new vision for assessment (Burke, 2009). When considered in the wider socio-cultural context, multimodality has been identified as critical for any progressive thinking about literacy education in the Twenty-First Century, particularly in terms of assessment (Burke, 2009; Burke & Hammett, 2009; Wyatt-Smith & Kimber, 2005; Kimber & Wyatt-Smith, 2008, 2009a, 2009b).

In what follows, we first explore the nature of multimodal texts and their role in "working multimodally". The New London Group's (1996, 2000) notion of design is considered, along with research into multimodality. As well, the concepts of "transmodal operation", "transmodal facility" and "staged multimodality" are explored as new ways of talking about the development of a multimodal text. The second section draws on several research studies concerned with designing assessment suited to multimodality. The final section considers implications of "working multimodally" for the design of future assessment tasks where students are asked to work multimodally.

MULTIMODALITY: WHAT DO WE KNOW ABOUT WORKING MULTIMODALLY?

Multimodal image-verbal texts have been part of literate history since the illuminated manuscripts of medieval times, and visual-verbal texts like film and media have been part of English studies for many years. Created by monastic clerics and film directors respectively, these multimodal texts represent expertise, artistry and the backing of religious and financial institutions. Both were simultaneously products of and contributors to the socio-cultural environment of their times, serving religious and/or cultural purposes. By contrast, today's multimodal texts are readily created, published and shared by novices in their own homes, using new technologies. These image-text-audio-music-kinetic texts have exploded the notion of multimodality on an unprecedented scale. Their relevance for teaching purposes and assessment possibilities in the English classroom has become the subject of increasing interest in many countries around the world.

While research into modern-day multimodal texts and practices is very much in its infancy when compared to the longer traditions of literacy education and research, many concepts have been identified and defined. These constitute important steps in building a metalanguage to define multimodality. It is only through knowing and understanding that which is "new", relatively speaking, that informed choices about appropriate avenues for inquiry will be forged. As clearer definition is given to the multiple elements that constitute a multimodal presentation or performance, then definitive signposts can point towards a better alignment between practice and theoretical understandings about all that might be entailed in improving pedagogy and assessment for twenty-first-century Subject English.

To this end, a brief overview follows of six concepts that we have identified as centrally related to multimodality. This suite is proposed as a framing for rethinking new approaches to assessment. Each concept sheds light on particular aspects of multimodal text creation, whether from socio-cultural, cognitive, linguistic or psychological perspectives. At the core of all of these examples is recognition that meaning is made, interpreted, communicated and shared through many different representations wherein verbal language might be only one. (For full accounts on multimodal theory, see Kress & Van Leeuwen, 2001; also Jewitt, 2008.) Each of these different ways of representing meaning – image, gesture, sound, music, speech, writing, gaze, movement *et cetera* – is a mode with its own distinctive features or semiotic resources[1] that can be called upon in any combination to make meaning.

Concept 1: Design

The New London Group (1996, 2000) has been influential in promoting design in both classroom practice and research terms. Their Design Curriculum addressed the complexity of modern-day worlds via three basic elements as the semiotic basis of any text and as stages in capturing the active, dynamic process of multimodal meaning-making: Available Designs, Designing, and the Redesigned. Six design elements (linguistic, visual, audio, gestural, spatial and multimodal) were outlined,

[1] The term "semiotic resources" is taken to refer to the meaning or symbol systems that combine for particular effect to achieve communication. As used here, the term draws on Saussure's (1974) notion of semiotics as being a science concerned with the study of the role of signs in society.

along with four associated components of pedagogy (situated practice, overt instruction, critical framing and transformed practice). This Design Curriculum answered, in part, Kress's (2000) call for "design" to be applied in creative and productive ways to the multimodal texts of the digital age. He argued that in shaping and reshaping digital texts, it was possible to build on the "critique" traditionally associated with evaluations of past productions to plan or devise new configurations or transformations that could accommodate any future technological or social developments. Kress argued:

> Design shapes the future through deliberate deployment of representational resources in the designer's interest. Design is the essential textual principle and pedagogic/political goal for periods characterised by intense and far-reaching change (2000, p. 160).

Jewitt (2008) also supported the usefulness of design in analysing how materials are chosen and combined to make and "distribute meanings across the boundaries of modes and multimodal connections" (p. 252). Her perspective is helpful when considering design as a process, as she refers to the "dynamic character of meaning making toward an idea of change and design" (Jewitt, 2006, in Jewitt, 2008, p. 259).

Earlier work on the design process included Lidstone and Duncan's (1996) Define/Disseminate/Design and Develop model for multimedia production. Here, reflection and evaluation, both higher-order thinking processes, were regarded as integral to the design process. In similar vein, Mitchell (2000) argued that intellectual benefits were attributed to the designer through the act of designing. These views support the notion that the design process can relate to reaching deeper levels of understanding on a topic.

From these perspectives, design has been constructed as the fulcrum of the classroom. Students who operate as designers and creators of multimodal texts call upon Available Designs in constructing their own representations. The examples that follow are drawn from over 800 student-designed multimodal texts created for a study into secondary students' digital literacies. This research was conducted by Griffith University and funded by the Australian Research Council, from 2003 to 2008.[2]

Figure 1 presents one instance of the concept of design. It illustrates how one fifteen-year-old student (Student A, Year 10) designed her introductory slide to a PowerPoint set of four, by selecting from Available Designs (that is, harvesting thirteen images from the Internet, WordArt and utilising several affordances of the software program). Student A also selected pale lemon to colour the blank slide template, the title, and the outline of the letters in "Plastic Bags". Horizontal lines were also added for effect. Taken together, her design establishes her view of the cumulative and damaging impact of plastic bags on the environment. If students are to engage intellectually, artistically and technologically with design in multimodal text creations, teachers need to commit to both the concept and the process of design in their own design of tasks and related assessment.

[2] Readers are invited to visit the study website at http://www.griffith.edu.au/education/creating-knowledge for further detail, including the samples of student creations discussed in this article.

Figure 1. Title Slide, Student A (Year 10, 2004)

Concept 2: Visualisation of literacy

Kress and Van Leeuwen's (2001) seminal work on the increasing visualization of literacy established the importance of the *visual/verbal relationship* (for example, in spatial layout) in multimodal texts, and building a grammar for defining visual design. Using Halliday's (1985) metafunctional theory as a heuristic, they explored how language and images fulfilled ideational, interpersonal and textual functions in constructing representations. This same approach was later applied in unpacking how the mode of *colour* contributed to meaning-making (Kress & Van Leeuwen, 2002). Here, specific colour values like saturation, purity, modulation, differentiation, hue, and even the provenance of names were identified for their impact on meaning. Through these different lenses, the researchers were able to evaluate the different meanings, uses and ideological positions as evident in several sample texts.

Figure 2 illustrates Kress and Van Leeuwen's notions of the ideational, interpersonal and functional values of language, image and colour. In this example, the fifteen-year-old student-designer (Student B) chose to represent her knowledge about the topic of plastic bags on a seven-slide set, each bearing a different colour or image as background. The colour tones of the backgrounds varied from light to bright, but the fifth slide (Figure 2) had particular impact for the viewer in its strong contrast with the other six. Colour, image and language combined to position the viewer/reader to accept that the continued use of plastic bags will gradually destroy the planet. It is not possible to determine whether the student-designer has intervened to change the hue and saturation levels of an existing image of a bright green, heavily foliaged tree, but the selected sepia-tones serve to suggest that the tree is dying. As well, the size of the tree suggests at least a century of growth. When combined with lexical choices like "choke", "poisonous", "stuck" and "hundreds of years to break down", and the bullet points of information, a strong, ideological message is apparent.

Figure 2. Slide 5 of 7, Student B (Year 10, 2004)

Another important element in the design features of multimodal texts is *typeface* (or the style, size and display of selected fonts). Van Leeuwen's (2005) research into choices of typeface and font sizes raised "connotation" and "metaphor" as an approach to the reading of "typographic communication". He deduced that meaning was established not just by the typeface, but also by its combination with "colour, three-dimensionality, material texture, and, in kinetic typography, movement" (p. 141). These elements are represented in samples of typographic communication created by Students C, D and E, and presented in Figure 3. In the first, Student C selected a WordArt shape that represented the physical building of a house, with "Save our environment" as the roof and "Our Home" as the structure. Even the colour and texture of the font suggest connotations of natural building materials. In this heading, Student C visually shaped the metaphor of the environment as a communal home. In the second, Student D accentuated the financial burden of plastic bags by substituting the dollar symbol for the letter "s". The third was augmented aurally with sound effects, that is, Student E combined kinetic animation and two different sounds as the text is gradually revealed onscreen. The sound of rapid gunfire accompanied the letter-by-letter revelation of the first line one. The sound of a single camera click accompanied the revelation of the remaining text in a single block.[3]

As indicated by these examples, students attended to a range of typographic features to represent and convey their meaning. These examples also illustrate Van Leeuwen's (2005) view of typography as an "ethos of innovation" (p. 142) for writing classrooms. That is, in focusing on their choices of font style, size and shape, or even their kinetic appearance onscreen to achieve particular effects, students were able to experiment in innovative ways to visualise literacy. In the Australian digital literacies study referred to earlier, student-designed texts also showed the designers' focus on being playful with typographical effects.

[3] The impact of Student E's animation can be appreciated by viewing the PowerPoint on the study website at http://www.griffith.edu.au/education/creating-knowledge.

Figure 3. Samples of students' typographic communication

Concept 3: Modes and modal affordances

The shaping of meaning in a multimodal text is linked to the ways in which different modes (words, images, sounds, colours, gestures or movement) and their particular modal affordances (much like the variations related to colour above) are called upon and combined. Jewitt (2008) identified affordances as material, physical and environmental, and different according to the mode. For example, the affordances of still images are governed by the logic of space and simultaneity, while the affordance of speech is governed by a temporal logic. According to Jewitt, the use of modes is partial – each plays a discrete role, yet each depends on others in shaping the meaning across the "full multimodal ensemble" (p. 247). It is partly the fluidity between and across modes that helps construct the dynamic entity of the multimodal text. Hence, knowledge of the constituent modes and how their modal affordances might be utilised and interrelated for particular effects can help improve the quality of the multimodal ensemble for the student-designer.

As far as can be illustrated on the static page, Figure 4 illustrates how Student A has drawn on several modes and their affordances (of images, text and software) to create her knowledge representation. What cannot be appreciated from the static page is the sense of dynamic interrelatedness between viewer and the multimodal text, as each mouse click activated the animations in an engaging, gradual and emphatic manner.

While slide transitions were used throughout, the interaction between the viewer and the multimodal text activates the dynamic nature of the text. For example, the title, underlining and subtitle appear progressively to add authority to the initial image transition onscreen. Slide 3 made an even stronger statement, as each auto-shape "exploded" visually onto the screen, individually, in bold hues with high saturation. The tonal variations in the layered background of Slide 4 are progressively added before the transitional overlay of the verbal text. In this short multimodal presentation, Student A has made good use of a range of modal affordances – particularly kinetic movement – to create her dynamic, multimodal text.[4]

Figure 4. Student A's multimodal knowledge representation (Year 10, 2004)

Concept 4: Transmodal operation

The concept of "transmodal operation" (Wyatt-Smith & Kimber, 2005) describes how a digital meaning-maker is required to move between and across different modes and even technology platforms to create a text and communicate meaning. This latter point is apparent in Figure 4, although it could not be said that there is an even balance in how the student has operated transmodally. That is, slides 2 and 4 have a stronger focus on textual information, with an absence of images, although the word boxes (slide 2) and graphic background shapes (slide 4) are design elements. Further, the spatial layout of verbal text in slide 4 lacks the clarity and impact of slides 2 and 3. Within the Australian digital literacies study, students were asked to reflect on their multimodal text creation:

[4] See the animated PowerPoint at http://www.griffith.edu.au/education/creating-knowledge.

> *Do you feel that your website is an effective and educational source of information for the community? What is its best feature? If you had a second chance to complete this task, is there anything that you would like to do differently?*

Student A's response indicated an expectation that an effective online multimodal text should be not just visually appealing and dynamic, but also rich in information:

> I think my website is a bit short on information. I think that if I had a second chance to complete this task I would include a lot more information so that it would be a really effective source of information. I think that its best feature is that it's colourful and animated.

Yet for Student A to achieve the level of effectiveness in her multimodal design that she outlined, she needed to move fluidly and strategically across the Internet, software program, visual, verbal, kinetic and auditory modes. Hence, her ability to work transmodally was also linked to her level of technological proficiency. This was the case with the majority of the 800 student-designed products in the online literacies research project. Hence, our original concept of "transmodal operation" morphed into "transmodal facility", defined as that fine-tuned ability to work with and across source texts, technology platforms and modes of representations to create new digital texts where critical thinking about content and concepts is balanced with the aesthetics of design (Kimber & Wyatt-Smith, 2009b; Wyatt-Smith & Kimber, 2010, forthcoming). With the increasing convergence and powerful miniaturisation of technologies, young people can operate across modes in their sourcing and creation of knowledge products online, at any time and any place. The development of their capabilities across all modes and platforms becomes more critical.

Concept 5: Cohesion

"Cohesion" refers to the ways in which the selected visual, verbal and even aural elements are displayed and combined to achieve unity. Headings, sub-headings, lexical choices and cohesive ties directly affect cognitive structuring and meaning-making. Image, colour, spatial layout and navigational linking have particular relevance for achieving cohesion in a screen-based multimodal text, as does sound. Figure 4 illustrates how Student A mobilised colour tonalities, autoshapes and kinetic movement, questions as headings, spatial layouts and automated animations to bring some sense of cohesion to the slide set. In terms of hyperlinking, only the linear linking unique to the software program was utilised. This was typical of the majority of the student participants in the digital literacies study cited earlier. Very few students were able to incorporate non-linear, operational, hypertext-type linking to their PowerPoints or web pages. This absence could be regarded as an inadequacy in achieving full cohesion for the text.

The ability to achieve cohesion across modes can be regarded as a defining feature of success in working transmodally. The level of cohesion achieved by the designer can convey something of her cognitive and organisational abilities, technological facility, and aesthetic sensibility. When the multimodal text becomes part of an oral performance, further demands are placed on the student-designer to achieve cohesion across a raft of modes and modal affordances. Working multimodally thus requires the creator to draw on a combination of modal affordances to achieve maximum effect and impact in meaning-making. The expert orchestration of the different modes goes beyond using the design templates of presentation software, to call upon a raft of

capabilities as outlined above and to become a visible instance of the multimodal designer's creativity and control. This array serves to illustrate the complexity of multimodal orchestration that takes a period of time to build, display, reflect, re-vision and present – introducing the next concept, "staged multimodality".

Concept 6: Staged multimodality

Finally, we propose the concept of "staged multimodality" to capture something of the organic process of creation. The term foregrounds the fact that across the various stages of the whole process of creating a multimodal text and presenting it, say in an oral presentation, many modes might be involved, but not all at the same time. This is in accord with Jewitt's (2008) claims that in expanded notions of multiliteracies and multimodality in particular, an examination of classrooms as sites of literacy and learning should involve paying heed to all of the modes featured in the classroom:

> to better understand learning and teaching in the multimodal environment of the contemporary classroom, it is essential to explore the ways in which representations in all modes feature in the classroom (pp. 241-242).

Similar views were expressed by Eve Bearne (2009), when she advocated that English teachers become better informed about all that is involved in multimodality and how best to describe the development of a student's progress in multimodal creation. This type of shift in understandings of literacy and traditional views of reading and writing, she argued, required "the development of a metalanguage to support this change of emphasis" (p. 19). Such a change in emphasis, as a consequence, would mean that "summative assessments of learning" would hold less sway than "processes of … assessment *for* learning" (p. 19).

So, in preparing for the oral presentation mentioned earlier in this section, the student's careful selection, display and combination of images and texts might have been the focus of much deliberation in the early and middle phases of the design process. However, in the actual "final" presentation, teacher focus would be more on the gestural mode, with the PowerPoint relegated to a supportive aid more than a stand-alone item for careful evaluation. Yet to assess the presentation as a multimodal text in the real sense of the word and representing all of the concepts discussed to this point, it would be remiss to focus just on the speech and to ignore the significant contribution of the PowerPoint to the creation process of the multimodal ensemble. In terms of Student A's work towards creating the PowerPoint shown in Figure 4, an online concept map and decision-making matrix were completed as part of the process. Both revealed extra information that was not included in the final product. If these are considered beside the completed PowerPoint, a fuller appreciation of the student-designer's research is provided. This matches a point raised by Levy and Kimber (2009) in their examination of a student sample from the digital literacies study. Thus the notion of "staged multimodality" draws attention away from the multimodal product itself to focus more pointedly on the whole process and complexity of multimodal text production and presentation.

If the concepts identified in this section (and those identified by others not directly cited in this article) were to be assembled into a set of broad principles as suggested by Burke and Hammett (2009), then positive steps would be under way for increasing English teachers' understanding of all that is involved in multimodal teaching,

learning and assessment. They could become part of the much needed metalanguage (Bearne, 2009; Unsworth, 2008) by which to describe and value all parts of the multimodal text creation process. The effectiveness of a wider adoption of such principles or metalanguage also requires mindsets (Coiro *et al.,* 2008) that encompass the full scope of modal possibilities in rethinking pedagogy and assessment possibilities for English classrooms of the future.

ASSESSING MULTIMODAL TEXTS: WHAT ARE THE POSSIBILITIES?

English teachers are generally and of necessity experienced assessors of student reading, writing and speaking. Their ability to identify markers of quality in student work indicates not just their expertise in substantive discipline knowledge, but also their potential for inducting student novices into both knowledge of relevant assessment criteria[5] and the rules for applying them (the latter usually unstated). They are also well versed in providing their students with meaningful and specific feedback on how to improve their work. Sadler's (1985, 1989) seminal work on assessment and learning led to the key insight that the explicit provision of defined criteria can play a critical role in informing students about expectations of quality and the features of performance against which their work would be assessed. The assumption is that the teacher has the insider knowledge of what counts as quality and that efforts to make explicit those criteria can inform the student's attempt to improve the quality of their work, even during its production:

> The guild knowledge of teachers should consist less in knowing how to evaluate student work and more in *knowing ways to download evaluative knowledge* to students (Sadler, 1989, p. 141; emphasis in the original).

In effect, this means making explicit the tacit knowledge of evaluative criteria that teachers carry in their heads and inducting learners into an understanding of their different dimensions, descriptions and expectations to help them appreciate the path to quality in their own work. By construing evaluation "as an agent in learning" (p. 138), Sadler extended teacher expertise to an ability and willingness not just to induct learners into guild knowledge, but also to facilitate their empowerment, automatically positioning them as would-be experts.

But does that expertise extend to the creation and evaluation of multimodal texts? What of students who may already be more expert at multimedia creation than their teachers? Even when multimodal text reading and creation have been incorporated into classroom activities or assessment pieces as vehicles for composition or oral presentations, rarely do substantial criteria of quality relate specifically to discrete multimodal components. Until there is greater certainty about how expertise in marshalling those concepts and elements discussed in the previous section might be manifested, then the status quo is sure to continue. Key towards this development is the identification of apposite *terms* that can target specific concepts in multimodal

[5] Drawing on Sadler (1985, 1989) the term "criteria" (plural; criterion, singular) refers to those properties, dimensions or characteristics by which student performance is appraised. Criteria apply in formulating judgment and may be articulated and pre-specified or remain unstated.

performance, whether as goals for performance or as criteria for enhancing assessment for technologically mediated learning and production.

Emerging terms for multimodal assessment developed from research

Over the past few years, various researchers in United Kingdom, Australia, South Africa, the United States and Canada have identified different ways by which the nature and quality of multimodal texts might be determined. Underpinning the following discussion is the understanding that in writing and creating, in composing and shaping, the work of the creator is being exercised across several levels: (a) to express the meaning/s and connections that have been drawn from source texts or the imagination; (b) to represent the meaning that the creator has drawn by establishing meaningful relationships between the selected written text, image/s, sound and movement; and, (c) to achieve coherence, elegance or arresting effects in design. All of these different factors are part of the meaning-making choices made by the creator *for* the intended audience. As such, the English teacher in particular is initially challenged to adopt and apply criteria that offer some insight into the student's performance in those varied aspects of multimodal text creation, and preferably drawing the creator and her community of learners into that assessment process (Kimber & Wyatt-Smith, 2009a; McLay & Mackey, 2009; Reed, 2008).

Some approaches to understanding the relationships between text, image and audience have adopted multi-semiotic (Burn, 2008; Kress & van Leeuwen, 2002) and systemic functional semiotic (Unsworth, 2006, 2008) perspectives. These authors have developed a metalanguage for describing multimodal meaning-making, drawing on Halliday's (1985) ideational, interpersonal and textual metafunctions. For example, in the United Kingdom, Burn (2008) researched multimodality in *Rebellion*, a computer game created by a fourteen-year-old Mongolian boy. Burn first added *interpretation* to Kress and van Leeuwen's (2002) four strata of multimodal texts (*discourse, design, production* and *distribution*). These five strata were then combined with Halliday's metafunctional approach as outlined previously. Of particular interest for English teachers was Burn's investigation into the boy's representation of characters, spaces, and ideology which suggested that assessment criteria developed from these perspectives could help unpack ways of improving narrative and representational aspects of multimodal meaning-making. Burn concluded that the "whole dialogic chain, from producer through text to audience/interpreter" would provide a fuller picture of the text in context, and that a synthesis of cultural studies with multimodal semiotics was useful for analysis of the practices "across modes and media, designs and technologies, and the cycle of semiotic production and interpretation" (p. 177). This conclusion foregrounds the complex process of multimodal text production as indicated previously in the discussion on staged multimodality.

Other early attempts at multimodal assessment tended to be largely print-dominant in conception and applied to a final product. For example, Wyatt-Smith and Kimber (2005) mapped the terrain of student performance in shaping online, multimodal texts into a "framework of assessment criteria" (p. 28) entailing four main criteria: *e-proficiency, cohesion, content* and *design*. Each criterion was defined with a sense of multimodality, but with the expectation that they could be reframed if any of the student work to be evaluated (800 items prepared for the digital literacies study mentioned previously) suggested additional criteria.

The criterion of *"e-proficiency"* was taken to extend beyond competence with technology to include discriminating use of technology in the overall creation of an online text. It recognised that the choice of software alone would simultaneously open up and close down "certain ways of working with language, as well as within and across modes" (p. 28). The e-proficient user showed she was net-savvy, using diverse search engines and strategies, and verifying the "credibility and currency of sources" (p. 29), even ideology. *"Cohesion"* was summarily defined as "unifying the structure, representation, organisation of ideas, links" (p. 28) and acknowledged the potential of interactive links to give structure, depth, explanation, and contrasting points of view, as in an interlinked PowerPoint. In recognition of the online environment, *"content"* was defined as "working with existing knowledge to create new knowledge" (p. 28) in terms of structure across a node (paragraph, slide or screen), how it matched purpose to audience, and whether the transformation of existing to "new" knowledge went beyond cutting-and-pasting. Placed fourth, *"design"* was accorded the key attribute of "creating an aesthetic, artful design" (p. 28) and positioned as intrinsic to multimodality. As part of assessing student work samples, attention focussed on the quality of the images, their relevance and way of working in association with other modes like speech or written text, as well as spatial layout.

These criteria have been applied to discussion of student samples from English classrooms in Australia (Wyatt-Smith & Kimber, 2005; Kimber & Wyatt-Smith, 2008). They formed the basis for evaluation of the 800 student-created digital texts discussed earlier. Levy and Kimber (2009) drew on the 2005 criteria to develop a way of talking about two multimodal text designs created by the one student, two years apart, also drawing on the two digital texts she had created in the multimodal-creation process. Sets of questions were developed under each criterion, but the authors focused specifically on the *title slide*, *headings across the slide set*, and the *knowledge representation across the set of slides*. Primacy was given to the *design* criterion, the authors explaining:

> Good *design* requires a student author to have an understanding of the technologies and tools available, and an ability to manage the design environment to meet the desired goals. Essentially, design involves an intentional combination and display of forms, shapes or materials in a variety of media. For the purposes of this case study, we were interested in design at both the macro and micro levels in each product, and the student's developing ability to manage and work within this environment as demonstrated by her creations. The macro viewpoint required some kind of overview perspective on design solutions and design quality, while the micro viewpoint required attention to the detailed decision-making of the student author (2009, p. 493).

Comparative evaluations suggested that a fuller insight into the student's learning was obtained not just from the PowerPoint sets but also from the digital documents prepared in the learning process (concept map, decision-making matrix, website evaluations and reflections on the learning process) (Levy & Kimber, 2009, p. 502) and as part of the concept of staged multimodality. These items demonstrated the depth of the student's processing of online material, the accessed Internet sites, whether she used her own words, copied or pasted or reshaped visual and verbal materials. Interview discussion would have shed light on her reasons for particular

choices and actions in the text creation process, as did Burn (2008) in interviews with his game-creator.

Just as "staged multimodality" refers to the process of production and development of a multimodal text, a similar term might be useful in describing how a young person's control of the complexity of multimodal production might be evident and ideally strengthened. As developmental growth is a key principle underpinning assessment for learning, teachers and students would benefit from clarity of delineation of specific technology applications and their usage, currently silenced in the assessment for learning literature.

Finding terms to describe development towards multimodal facility

Finding ways to talk about developmental changes in young people's multimodal production has been addressed in the United Kingdom. Bearne (2009) reported on two major projects that involved a consensus of teachers in shaping a continuum of descriptors of multimodal text creation: (a) in the early stages, (b) increasingly assured, (c) more experienced and often independent, or (d) assured, experienced, and independent multimodal text-makers. Her examples were hand-drawn, image-text narratives, and not digital creations, but the descriptors offered ways of talking about the capabilities of these primary school multimodal creators. Progress was marked by an increasing ability to attend to a series of specific aspects associated with matching mode and content to specific purposes and audiences, structuring texts, using technical features for effect, and reflecting (see pp. 22-23). A counterpoint, however, was raised by Sefton-Green (2009). While he would support the notion that progress in multimodal text creation is a key issue for literacy teachers, he argued that current school assessment systems operate as gatekeepers and sorters of academic accomplishment, consistently requiring "notions of incompetence or failure" (p. 196). Such a view runs counter to Bearne's (2009) euphemistic "in the early stages" of development. Nevertheless, the tension is part of a wider and much needed conversation about matching assessment to new literate practices, and about formative assessment as enabling improvement in learner-focused curriculum. From these perspectives, accessible terms and descriptors could well prove indispensible during the production stage of multimodal texts.

One South African project sought to draw students into a conversation about assessment rubrics and multimodal learning (Reed, 2008). Pre-service teachers were required to design a multimodal text *with* accompanying assessment rubrics. In each of three examples, Reed described the student's product, oral performance, self-assessment using their own rubrics, and the teacher's evaluation of the text, performance and rubric appropriateness. She noted that, in most cases, each rubric tended to diminish or "flatten" what had been achieved in the presentation, in effect, shifting a "magical" performance to something "mundane" (p. 36). Also, she contended that devising categories and identifying discrete elements resulted in reflections lacking responsiveness to the dynamic interactions that operated between the different modes in performance. A further observation referred to the language choices framing the rubrics as being largely drawn from print-based curriculum and assessment guidelines rather than directly reflective of the multimodality of the whole text and performance. Nevertheless, this approach has great potential for raising

young people's metacognitive capacities about the whole multimodal learning and creative process.

In the evaluation criteria developed for the Australian digital literacies study cited earlier, student performance on nine different elements under the criteria discussed in the previous section was classified as Outstanding, Accomplished, Developing or Limited (see Kimber & Wyatt-Smith, 2009b and the research study website). While useful for describing differences in the quality of the multimodal texts on a single task, these terms could be applied along a trajectory of performance when working multimodally. Yet what is also needed, perhaps more than criteria descriptors tied to summative assessment of individual pieces, is the language to focus the attention of both teachers and students onto specific yet critical aspects involved when using, creating and sharing multimodal creations online. One possibility posed for consideration was an assessment framework that was organised in two columns ("use existing knowledge texts or materials" and "create and share new knowledge texts or materials") and three rows: *e-proficiency* (discussed earlier), *e-credibility* (discriminating and ethical usage of sources) and *e-designing* (discerning selection and aesthetic creations). Each row presented a series of questions designed to stimulate peer-to-peer and student-to-teacher conversations about explicitly stated elements of multimodality and online working that warrant attention for improving the text (Kimber & Wyatt-Smith, 2009b, p. 11).[6]

As indicated in the preceding discussion, rubrics are perhaps no longer the most appropriate assessment for multimodal texts. Better insights into the student-designers' development in working multimodally might be achieved through discussions amongst teachers and students on identifying indicators of quality in multimodal texts. These indicators could well be different with each new task or software program. Negotiating the scope of indicators of quality would align with assessment for learning principles, and serve to foster improvement in students' multimodal use and production.

With the increasing potential for collaborative interaction and feedback made possible by Web 2.0 technologies, English teachers in particular are afforded added scope for providing feedback (from teacher, peers or online experts) on student-designed texts. Here, consideration needs to be given not just to appropriate terms, but also to the processes of production and technology applications. All these can contribute to increasing the dynamic impact of assessment for learning and assessment in subject English.

The challenge of dynamic multimodality: Web 2.0 technologies

Web 2.0 technologies facilitate online interactions, information-sharing and creating, and collaborative actions. A range of software programs already allow the insertion of audio or video files, and multiple users' responses to online creations. The dynamic impetus that these tools give to multimodal texts challenges teachers, particularly in English classrooms, to consider possibilities for their inclusion with traditional

[6] Explanation of this assessment framework can be accessed from the authors' abstract on the conference website of the International Association of Educational Assessment at http://www.iaea2009.com/abstract/46.asp.

assessment practices. As mentioned previously, these digital tools appear particularly well suited to assessment *for* learning principles. Some examples of their focus in research on assessment of multimodality follow.

One research study investigation concerned the dynamic exchange or personal interactions on social networking sites. It involved the development of a framework for "assessing rhetorical uses of multimodality" (Rowsell, 2009, p. 110, adapted from Selfe, 2007) in three individual social networking spaces. A series of questions unpacked the main criteria to describe severally the *Multimodal Impact/Statement, Organisation, Salience* and *Coherence* (p. 110). In evaluating the rhetorical devices used by the Facebook site creators, comparisons were drawn in terms of (i) chosen modes, (ii) rhetorical effect, (iii) dominant mode and, (iv) inventory of skills acquired through Facebook. While research on multimodality is still in its infancy, the dynamic nature of multimodality, opportunities for conversations about multimodal text creation, and encouraging student progress have already figured prominently.

Beach, Clemens and Jamsen (2009) have investigated ways of attending to the dynamic nature of Web 2.0 technologies in assessment. They advocated teachers' and peers' use of digital tools embedded in the whole digital learning environment and process as a way of capturing the dynamic possibilities. Whether audio inserts, word-processed text boxes, blogs or wiki co-constructions, or whether included in e-portfolios where reflection on ongoing performance is prioritised, all represent invaluable resources upon which the creator can improve her creation and consider choices for mode, presentation or design with greater consciousness and support: "Having some formal mechanism for engaging in ongoing reflections fosters metacognitive awareness essential for learning" (p. 171). All this is seen as being integral to the complexity of multimodal text creation, where students should be encouraged to engage in critical self-assessment and revisions as part of the design process. To some extent, this view is supported by Reed's (2008) observation on the multi-layered complexity that defines multimodal text creation and assessment, already clouded by teachers' own assessment histories steeped in print-dominant worlds.

McLay and Mackey's (2009) research with Canadian teachers of English in the middle years noted the tension between professional dedication to the teaching of writing but a lesser uptake of Web 2.0 technologies in their classrooms. In considering how teachers could extend young people's capabilities using these technologies, the researchers challenged the inflexibility of rubrics or summative assessment regimes and argued for finding more innovative approached to assessments in "new literary environments" (p. 115). They advocated a more expansive view of assessment to draw students, online community members and teachers into a shared negotiation of activities and assessable formats. Within this view, they reconstituted the English classroom as "OurSpace", posing "distributed assessment" (p. 113) as a viable alternative that provided "an appropriate and authentic approach to new literacies" (p. 115). They argued that distributed assessment would entail "principled negotiations of purposes, tools, and appraisals" (p. 118) and offer a myriad of opportunities for developing the knowledge of both teachers and students. Here, conversational and communication strategies like "sideshadowing" protocols were offered as ways for helping the learner to reflect on the process of writing, and so heighten her metacognitive capabilities about the creative process:

> Used as a teaching tool, sideshadowing can heighten the matacognitive value of any creative activity that students engage in, and assist them in considering potential avenues for future creation. (p. 120)

In constructing the concepts of OurSpace and distributed assessment, McLay and Mackey offered new ways of thinking about working multimodally and assessing multimodality in the English classroom. Their views resonate with those of Bearne (2009), Beach, Clemens and Jamsen (2009), Reed (2008), and Kimber and Wyatt-Smith (2009a). All entail inquiries into how students might improve their metacognitive capacities, and the robustness of their learning, by recasting assessment as integral to the learning process, rather than remaining focused on end-products.

In summary, this section has reported on various research studies concerned with multimodal text production. From these studies, three key areas related to the development of appropriate multimodal assessment can be drawn: (1) finding language and metalanguage to define valued characteristics of multimodality; (2) matching the dynamic possibilities of multimodal texts with dynamic assessment tools; and (3) recognising the complex process of multimodal creation. They call into question the role of rubrics for assessing multimodal productions and are distilled into three broad principles for developing multimodal assessment in the concluding section.

CONCLUSION: WHAT MIGHT "ASSESSING MULTIMODALLY" MEAN?

The research projects addressed in this article suggest that there could be a multitude of ways by which to assess students' multimodal creations. When considered as a body of "evidence", they point to some broad principles for any future development of multimodal assessment.

The first principle concerns finding the language and metalanguage to describe indicators of quality in multimodal text production and creation. If teachers and students have a shared understanding of terminology that clearly describes the constituent parts of a multimodal text, then there could be a foundation for shaping more focused conversations about quality in multimodal performance. Also required are opportunities for thinking creatively about new possibilities in multimodal production and the demands of such production, given that digital technologies are sure to become even more dynamic than they are at present. The six concepts presented in the first part of the article seek to move in this direction. However, we also recognise that exploring new ways of assessing will also require rethinking indicators of quality as new technologies become available and adopted in classrooms. Such ways will probably involve experimentation; they will involve open discussion amongst teachers and students. They will also involve exploration of language and different ways of working to produce new knowledge and knowledge representations. They will, we suggest, also require developing a metalanguage that is organic and geared towards deeper appreciation of what constitutes quality in multimodal creativity. In all these ways, linguistic signposts can point towards ways of improving one's performance and attaining transmodal facility, especially where

the student-designer can reflect on her own progress and make informed decisions about choices of modes and modal affordances to represent knowledge.

> ***Principle 1:*** **The development of language and metalanguage to shape multimodal assessment needs to be organic, shared and negotiated.**

The second principle concerns the dynamic nature of reading and creating multimodal text, as distinct from a static printed page. Just as multimodality comes to exist through the drawing together of several modes and their modal affordances in dynamic ways to create meaning, then assessment modes and practices should assume complementary dynamic formats. This could mean that any attempt to stabilise an organic, dynamic text in a static set of criteria or scoring rubrics might be counter-productive. Defining criteria or rubrics by which to evaluate student multimodal performance is, at best, an attempt to pin down a dynamic, potentially magical performance to a static moment in time (at least momentarily). With greater flexibility in design, incorporating aspects of Web 2.0 technologies where appropriate, and involving the learner in the negotiations, opportunities are presented for achieving greater vitality in assessment modes. Digital tools for adding voice and vision, and peer-to-peer, online communities, offer ways of providing feedback, knowledge on a need-to-know basis, and dynamic interactions. All these choices offer a raft of assessment *for* learning opportunities for teachers and students to enact. Hence, assessment for learning in digital worlds can be facilitated by dynamic tools and opportunities for meaningful interpersonal communication.

> ***Principle 2.*** **The development of assessment practices for dynamic multimodal texts should involve dynamic tools.**

The third principle concerns the complexity of multimodal production and the nature of working multimodally where multiple layers of sophisticated reading and authoring skills are required, and the concept of staged multimodality is acknowledged. For English teachers, this will require finding ways to support young people in developing metacognitive control and automatic deployment of related skills throughout the whole process of learning. With teacher-student-community expert discussions about indicators of quality, before, during and after a multimodal production, and incorporating student reflection on the whole process of learning or creating, then a wider notion of multimodal assessment can be achieved. Hence, this third principle is tied to the process of learning and working multimodally, be it as an individual or solo performance or in groups. It acknowledges the concept of staged multimodality, attending to the process of learning and production, from conception of the design to reflection on the effectiveness of the production. From this position, the reflective stage could well become the key indicator of learning, expressiveness and progress.

> ***Principle 3.*** **The assessment of multimodal learning should be concerned with the process of learning – from conception to reflection – not just the final product.**

In conclusion, if English teachers are to support young people's creative and critical growth with new literacies, then assessment practices need to be more in tune with the digital communication landscape. We need to develop different ways of talking about assessment for teachers and students to explore the valued characteristics of

multimodality. Attention needs to focus on how the student-designer has created her own multimodal text for specified purposes and audiences, and whether source images and texts have been duly acknowledged, transformed, interconnected and assembled in innovative, aesthetic ways. Opportunities should be created for the student to develop skills in critiquing and reflecting on the values operating in source and created texts. Self-reflection should be developed to a level of metacognitive awareness, where decisions for actions taken will reflect consideration of ethical representation. Further, a range of software and media sources will have been utilised to effect, in efficient and fluid ways. All these extend notions of literate performance in ways that go beyond print-based classrooms and assessments. They offer exciting directions for transforming English teaching and ensuring its continuing relevance in twenty-first century learning.

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